

§ 98.41 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains one or more electricity generating units and the facility meets the requirements of § 98.2(a)(1).

§ 98.42 GHGs to report.

(a) For each electricity generating unit that is subject to the requirements of the Acid Rain Program or is otherwise required to monitor and report to EPA CO₂ emissions year-round according to 40 CFR part 75, you must report under this subpart the annual mass emissions of CO₂, N₂O, and CH₄ by following the requirements of this subpart.

(b) For each electricity generating unit that is not subject to the Acid Rain Program or otherwise required to monitor and report to EPA CO₂ emissions year-round according to 40 CFR part 75, you must report under subpart C of this part (General Stationary Fuel Combustion Sources) the emissions of CO₂, CH₄, and N₂O by following the requirements of subpart C.

(c) For each stationary fuel combustion unit that does not generate electricity, you must report under subpart C of this part (General Stationary Fuel Combustion Sources) the emissions of CO₂, CH₄, and N₂O by following the requirements of subpart C of this part.

§ 98.43 Calculating GHG emissions.

Continue to monitor and report CO₂ mass emissions as required under § 75.13 or section 2.3 of appendix G to 40 CFR part 75, and § 75.64. Calculate CO₂, CH₄, and N₂O emissions as follows:

(a) Convert the cumulative annual CO₂ mass emissions reported in the fourth quarter electronic data report required under § 75.64 from units of short tons to metric tons. To convert tons to metric tons, divide by 1.1023.

(b) Calculate and report annual CH₄ and N₂O mass emissions under this subpart by following the applicable method specified in § 98.33(c).

§ 98.44 Monitoring and QA/QC requirements.

Follow the applicable quality assurance procedures for CO₂ emissions in appendices B, D, and G to 40 CFR part 75.

§ 98.45 Procedures for estimating missing data.

Follow the applicable missing data substitution procedures in 40 CFR part 75 for CO₂ concentration, stack gas flow rate, fuel flow rate, high heating value, and fuel carbon content.

§ 98.46 Data reporting requirements.

The annual report shall comply with the data reporting requirements specified in § 98.36(b) and, if applicable, § 98.36(c)(2) or (c)(3).

§ 98.47 Records that must be retained.

You shall comply with the record-keeping requirements of §§ 98.3(g) and 98.37.

§ 98.48 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Subpart E—Adipic Acid Production**§ 98.50 Definition of source category.**

The adipic acid production source category consists of all adipic acid production facilities that use oxidation to produce adipic acid.

§ 98.51 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains an adipic acid production process and the facility meets the requirements of either § 98.2(a)(1) or (2).

§ 98.52 GHGs to report.

(a) You must report N₂O process emissions at the facility level.

(b) You must report under subpart C of this part (General Stationary Fuel Combustion Sources) the emissions of CO₂, CH₄, and N₂O from each stationary combustion unit following the requirements of subpart C.

§ 98.53 Calculating GHG emissions.

(a) You must determine annual N₂O emissions from adipic acid production according to paragraphs (a)(1) or (a)(2) of this section.

(1) Use a site-specific emission factor and production data according to paragraphs (b) through (h) of this section.

§ 98.53

40 CFR Ch. I (7–1–10 Edition)

(2) Request Administrator approval for an alternative method of determining N₂O emissions according to paragraphs (a)(2)(i) and (a)(2)(ii) of this section.

(i) You must submit the request within 45 days following promulgation of this subpart or within the first 30 days of each subsequent reporting year.

(ii) If the Administrator does not approve your requested alternative method within 150 days of the end of the reporting year, you must determine the N₂O emissions factor for the current reporting period using the procedures specified in paragraphs (b) through (h) of this section.

(b) You must conduct an annual performance test according to paragraphs (b)(1) through (b)(3) of this section.

(1) You must conduct the test on the waste gas stream from the nitric acid oxidation step of the process using the methods specified in § 98.54(b) through (d).

(2) You must conduct the performance test under normal process operating conditions and without using N₂O abatement technology.

(3) You must measure the adipic acid production rate during the test and calculate the production rate for the test period in metric tons per hour.

(c) You must determine an N₂O emissions factor to use in Equation E-2 of this section according to paragraphs (c)(1) or (c)(2) of this section.

(1) You may request Administrator approval for an alternative method of determining N₂O concentration according to the procedures in paragraphs (a)(2)(i) and (a)(2)(ii) of this section. Alternative methods include the use of N₂O CEMs.

(2) Using the results of the performance test in paragraph (b) of this section, you must calculate a facility-specific emissions factor according to Equation E-1 of this section:

$$EF_{N_2O} = \frac{\sum_{i=1}^n \frac{C_{N_2O} * 1.14 \times 10^{-7} * Q}{P}}{n} \quad (\text{Eq. E-1})$$

Where:

EF_{N₂O} = Average facility-specific N₂O emissions factor (lb N₂O generated/ton adipic acid produced).

C_{N₂O} = N₂O concentration per test run during the performance test (ppm N₂O).

1.14 × 10⁻⁷ = Conversion factor (lb/dscf-ppm N₂O).

Q = Volumetric flow rate of effluent gas per test run during the performance test (dscf/hr).

P = Production rate per test run during the performance test (tons adipic acid produced/hr).

n = Number of test runs.

(d) If applicable, you must determine the destruction efficiency for each N₂O abatement technology used at your facility according to paragraphs (d)(1), (d)(2), or (d)(3) of this section.

(1) Use the manufacturer's specified destruction efficiency.

(2) Estimate the destruction efficiency through process knowledge. Examples of information that could constitute process knowledge include cal-

culations based on material balances, process stoichiometry, or previous test results provided the results are still relevant to the current vent stream conditions. You must document how process knowledge was used to determine the destruction efficiency.

(3) Calculate the destruction efficiency by conducting an additional performance test on the emissions stream following the N₂O abatement technology.

(e) If applicable, you must determine the abatement factor for each N₂O abatement technology used at your facility. The abatement factor is calculated for each adipic acid facility according to Equation E-2 of this section.

$$AF_N = \frac{P_a \text{ Abate}}{P_a} \quad (\text{Eq. E-2})$$

Where:

Environmental Protection Agency

§ 98.54

AF_N = Abatement factor of N_2O abatement technology (fraction of annual production that abatement technology is operating).

$P_{a \text{ Abate}}$ = Annual adipic acid production during which N_2O abatement was used.

P_a = Total annual adipic acid production (ton acid produced).

(f) You must determine the annual amount of adipic acid produced and the

annual adipic acid production during which N_2O abatement is operating.

(g) You must calculate annual adipic acid production process emissions of N_2O by multiplying the emissions factor (determined using Equation E-1 of this section) by the total annual adipic acid production and accounting for N_2O abatement, according to Equation E-3 of this section:

$$N_2O = \sum_1^N \frac{EF_{N_2O} * P_a * (1 - (DF_N * AF_N))}{2205} \quad (\text{Eq. E-3})$$

Where:

N_2O = Annual N_2O mass emissions from adipic acid production (metric tons).

EF_{N_2O} = Facility-specific N_2O emissions factor (lb N_2O generated/ton adipic acid produced).

P_a = Annual adipic acid produced (tons).

DF_N = Destruction efficiency of N_2O abatement technology N (abatement device destruction efficiency, percent of N_2O removed from air stream).

AF_N = Abatement factor of N_2O abatement technology N (fraction of annual production abatement technology is operating).

2205 = Conversion factor (lb/metric ton).

N = Number of different N_2O abatement technologies.

(h) You must determine the amount of process N_2O emissions that is sold or transferred off site (if applicable). You can determine the amount using existing process flow meters and N_2O analyzers.

§ 98.54 Monitoring and QA/QC requirements.

(a) You must conduct a new performance test and calculate a new facility-specific emissions factor according to the frequency specified in paragraphs (a)(1) through (a)(3) of this section.

(1) Conduct the performance test annually.

(2) Conduct the performance test when your adipic acid production process is changed either by altering the ratio of cyclohexanone to cyclohexanol or by installing abatement equipment.

(3) If you requested Administrator approval for an alternative method of determining N_2O concentration under § 98.53(a)(2), you must conduct the per-

formance test if your request has not been approved by the Administrator within 150 days of the end of the reporting year in which it was submitted.

(b) You must measure the N_2O concentration during the performance test using one of the methods in paragraphs (b)(1) through (b)(3) of this section.

(1) EPA Method 320, Measurement of Vapor Phase Organic and Inorganic Emissions by Extractive Fourier Transform Infrared (FTIR) Spectroscopy in 40 CFR part 63, appendix A;

(2) ASTM D6348-03 Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy (incorporated by reference, *see* § 98.7); or

(3) An equivalent method, with Administrator approval.

(c) You must determine the production rate(s) during the performance test according to paragraph (c)(1) or (c)(2) of this section.

(1) Direct measurement (such as using flow meters or weigh scales).

(2) Existing plant procedures used for accounting purposes.

(d) You must conduct all required performance tests according to the methods in § 98.54(b) in conjunction with the applicable EPA methods in 40 CFR part 60, appendices A-1 through A-4. Conduct three emissions test runs of 1 hour each. All QA/QC procedures specified in the reference test methods and any associated performance specifications apply. For each test, the facility must prepare an emissions factor